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## (54) METHOD FOR USER INTERFACE AND DATA PROCESSING SYSTEM

(57)Abstract:

PURPOSE: To provide a data processing system which automatically selects variable complexity user interfaces for the function selected within a multifunction application.

CONSTITUTION: The multiple user interfaces are set for the function selected within the multifunction application and are stored in the data processing system 10. The multiple user interfaces preferably have the respective variable complexity levels. The desired complexity levels for the specific functions for the respective selected users are assigned by utilizing user profiles for the selected users in the data processing system 10. The specific one among the multiple user interfaces in the multiple function application is automatically selected in selective response with the specific functions by the users by effectively utilizing these user profiles.

## TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] Therefore, the purpose of this invention is offering the improved data processing system.

[0007] Another purpose of this invention is offering the improvement user interface for using with data processing system.

[0008] It is offering the improvement user interface which enables automatic selection of the adjustable complexity user interface to the function of this invention another purpose's having been further chosen within multiplex functional application.

[0009]

## EFFECT OF THE INVENTION

[Effect of the Invention] Since this invention is constituted as mentioned above, automatic selection of the adjustable complexity user interface to the function in which it was chosen in multiplex functional application can be performed.

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## PRIOR ART

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[Description of the Prior Art] The design of the newest computer system has turned many efforts in order to raise the efficiency of a man machine interface. The so-called "user interface" must be easy or intuitive so that a software application with a comparatively unripe complicated user can be utilized, and moreover, these user interfaces must so be perfect enough that they can access the feature of a large number which the application of the newest [ user / skillful ] generally offers. However, a designer has to compromise on the interface which displays [ as opposed to / the both sides of these many problems / only ] the answer which is never the best, and has to offer this in many cases.

[0003] The speed, the complexity, and skill level of the game as which an example of the answer of the common knowledge to this problem was chosen are eternally shown for a user in many the games or amusement fields which can be chosen in the game level of the "beginner", the "middle", or the "expert" who can change about the whole game or the persistence time of a sequence. While the user from whom skill level changes with these approaches can enjoy a single game, it does not recognize this technique about a certain thing that a user has skill level which is different about the various aspects of affairs of a game or an amusement field, either. in this system, the facility for taking into consideration the user who has the skill of expert level on one aspect of affairs of a game or an amusement field, and has the skill of beginner level on another aspect of affairs does not exist

[0004] The same approach utilizable in relation to productivity software, such as word processing, is indicated by the U.S. patent No. 4,821,211. According to this patent, the user called an "expert" can skip an unnecessary middle process to all the functions in the application concerned. For example, a menu answer is not displayed to the user expected remembering all the functions that can be used in the selected position in application, but its \*\* is also good. Like the above, the method of U.S. JP,4,B and an indication of No. 821 or 211 does not include the facility which took into consideration the user who has various skill level to the function to differ in multiplex functional application.

[0005] Therefore, it is clear that the need for the method of making it possible to set up an adjustable complexity user interface about a different function in multiplex functional application and equipment consists.

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## TECHNICAL FIELD

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[Industrial Application] this invention relates to advanced data processing system and the improvement user interface especially used with data processing system generally. this invention relates to the improvement user interface which enables automatic selection of the adjustable complexity user interface to the function in which it was chosen in multiplex functional application more at a detail.

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

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[0002]

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cases.

[0003] The speed, the complexity, and skill level of the game as which an example of the answer of the common knowledge to this problem was chosen are eternally shown for a user in many the games or amusement fields which can be chosen in the game level of the "beginner", the "middle", or the "expert" who can change about the whole game or the persistence time of a sequence. While the user from whom skill level changes with these approaches can enjoy a single game, it does not recognize this technique about a certain thing that a user has skill level which is different about the various aspects of affairs of a game or an amusement field, either. in this system, the facility for taking into consideration the user who has the skill of expert level on one aspect of affairs of a game or an amusement field, and has the skill of beginner level on another aspect of affairs does not exist

[0004] The same approach utilizable in relation to productivity software, such as word processing, is indicated by the U.S. patent No. 4,821,211. According to this patent, the user called an "expert" can skip an unnecessary middle process to all the functions in the application concerned. For example, a menu answer is not displayed to the user expected remembering all the functions that can be used in the selected position in application, but its \*\* is also good. Like the above, the method of U.S. JP,4,B and an indication of No. 821 or 211 does not include the facility which took into consideration the user who has various skill level to the function to differ in multiplex functional application.

[0005] Therefore, it is clear that the need for the method of making it possible to set up an adjustable complexity user interface about a different function in multiplex functional application and equipment consists.

[0006]

[Problem(s) to be Solved by the Invention] Therefore, the purpose of this invention is offering the improved data processing system.

[0007] Another purpose of this invention is offering the improvement user interface for using with data processing system.

[0008] It is offering the improvement user interface which enables automatic selection of the adjustable complexity user interface to the function of this invention another purpose's having been further chosen within multiplex functional application.

[0009]

[Means for Solving the Problem] As the above-mentioned purpose is described below, it is attained. The multiplex user interface which the method and equipment of this invention were set up about the optional feature in multiplex functional application, and was stored in data processing system is utilized. As for each of a multiplex user interface, it is desirable to have the complexity of different level. Next, the request level of complexity is specified about the specific function to each selection user by utilizing the user profile to the user as whom it was chosen in data processing system. Then, these user profiles are utilized, selection of the specific function by the user is answered, and specific one in the multiplex user interface in multiplex functional application is chosen. A user can change a user profile alternatively or can also make a user profile instead change automatically in the one example of this invention by generating of selection events, such as an end of the passage of time or the curriculum chosen by the user. In the situation that a user profile specifies the request level of the complexity over an optional feature to be neither of the cases, a default user interface is also offered for the purpose of use.

[0010]

[Example] Reference of a drawing illustrates the data processing system 10 utilizable in order especially to carry out the method and equipment of this invention by drawing 1. Like illustration, data processing system 10 contains the display unit 12 used in order to make a video outlet on a display screen 14. As for a display unit 12, being combined with a processor 16 is desirable, and as for this processor 16, it is desirable [ a display unit ] to include a microprocessor 18 and memory 20 so that I may be understood by this contractor of a computer device technical field. The keyboard 22 is connected to the processor 16, and in the example shown by this invention, this keyboard 22 is utilized in order to enable a user to change a user profile alternatively so that it may be explained in full detail in the text below.

[0011] By referring to the specification included in the text, this contractor will understand that data processing system 10 utilizes the so-called "personal" computers, such as a PS/2 type personal computer made from IBM of the New York State Armonk whereabouts, and is carried out. In an option, data processing system 10 can also utilize and carry out mid-end model AS / 400 computer made from IBM, or the large-sized computer like either of some suitable large-sized mainframe computers. You may utilize the method and equipment of this invention in order to perform an improvement user interface in relation to the arbitrary data processing system which has the multiplex functional application which exists there.

[0012] In drawing 2, the computer display screen 14 in which a user profile utilizable in order to carry out the method and equipment of this invention is shown is illustrated. A user profile contains the functional list under the

functional (Function) column (column) 32, and the auxiliary level to each function under the auxiliary level (Assistance Level) column 34 as illustration. Thus, a user can discriminate the specific function in multiplex functional application, and can also specify the complexity level or auxiliary level which this user wants about the specific function.

[0013] furthermore, it is shown in drawing 2 -- as -- a user -- an entry point (entry point) 36 -- a user profile auxiliary level default (User profile assistance level default) -- moreover, a system default (System default) can also be specified by the entry point 38 Thus, when a user profile does not specify desired complexity or desired auxiliary level about a specific function, to determine whether a user profile specifies the default level to the user first by the method of this invention is tried.

[0014] For example, a user can also specify the default level of middle complexity about all the functions that are not clearly shown in the user profile. Thus, a user does not need to input desired complexity level physically about the function of specified a large number. Furthermore, the whole system can have default level, such as "BASIC (BASIC) etc." utilized when there is nothing of a user profile or a user profile auxiliary level default that both exist about a specific user or a specific specific function. Moreover, when a user profile does not specify desired complexity level about a specific function, a user can also specify that a system level default is utilized, so that it may be illustrated by the user profile shown in the computer display screen 14.

[0015] The computer display screen 14 which expresses change of a user profile utilizable in order to carry out the method and equipment of this invention with drawing 3 is illustrated. As illustration, the computer display screen 14 is also utilizable in order to show the user profile corresponding to the specific function of multiplex functional computer application. In order to discriminate the specific function in which desired complexity level is specified, as for the functional identifier 24, it is desirable to be utilized in relation to the user profile expressed in the display screen 14.

[0016] The auxiliary level window 26 is shown in the computer display screen 14. The auxiliary level window 26 is utilized according to the method and equipment of this invention, in order to enable a user to discriminate the present auxiliary level or present complexity level specified about the function discriminated within the functional identifier 24. A "fundamental (Basic)" level interface is chosen about the function discriminated by the functional identifier 24 so that it may be illustrated in the present level identifier 28. In the auxiliary level window 26, the selection level identifier 30 is expressed similarly, and the user has come to be able to carry out typing in of the complexity level of the request to the function discriminated within the functional identifier 24 through the keyboard 22 (see drawing 1) by this.

[0017] A user can also choose fundamental complexity level, and middle complexity level or middle advanced complexity level about the function discriminated by the functional identifier 24 as shown in drawing. thus, if the above thing is referred to, when a user utilizes the user profile shown in drawing 2, it will be understood by this contractor that two or more functions in the complicated computer application which has the multiplex function matched with them are alike, respectively, it receives, and desired complexity level can be specified Thus, while the user who has much expertise to one function chooses the most complicated interface level about the function, to a function when the user does not have the know how so much, the interface level which is not not much complicated can also be specified.

[0018] The logic flow chart which showed creation/correction of a user profile like the user profile expressed with drawing 3 is shown by drawing 4. As illustration, it is started with block 40, a process shifts to block 42 after that, and block 42 discriminates the function chosen from the multiplex functional software application. Next, a process shifts to block 44 and choosing the user profile to this user about the discriminated function is shown by the block 44.

[0019] After discriminating the function which chose this user's user profile and was chosen from the function included in multiplex functional application, next, block 46 makes creation/correction of a user profile. As shown in drawing 3, a user can specify or correct the auxiliary level demanded about a specific function by this step. That is, it is the complexity level which should be utilized with the interface between a user and an optional feature. Next, a process shifts to block 48, and block 48 shows that a user profile is stored in data processing system 10, and after that, a process ends it, as shown in block 50.

[0020] Now, as it is utilized for drawing 5 in order to carry out the method and equipment of this invention, the logic flow chart showing automatic correction of a user profile is shown. As mentioned above, a process shifts to block 62, after being started with block 60, and the determination of whether the selected event occurred is shown by block 62. It will be understood by this contractor that they are the arbitrary events utilized in order that it may correct a user profile automatically, as what meant by "the selected event" can correct the complexity level of the user interface which characterized by the user and was chosen about the specific function.

[0021] For example, a system which makes it possible to increase complexity after the passage of time as which the

user interface chosen by the specific user about the function chosen within multiplex functional application was chosen can also be made to carry out. That is, after utilizing the application between the time periods as which the user was chosen, the complexity of the user in this application and the interface between optional features can also improve automatically, when recognizing the increase in the amount of experiences which the user accumulated about the function. Furthermore, it is also utilizable in order to correct automatically the complexity level of the interface chosen by the user about the specific function according to the pneuma and the meaning of this invention in the input of a display of the educational result about the specific function in a specific user's individual file.

[0022] In both cases, block 62 expresses the determination of whether the event utilizable in order to start correction of a user profile according to the method and equipment of this invention occurred. As shown by block 62, a process is only repeated, until the time of an event occurring comes. However, after the event specified by the user or the system operator as an event which promotes automatic correction of a user profile occurs, a process shifts to block 64 and block 64 chooses the user profile to this function and user. Then, block 66 corrects a user profile by the method specified corresponding to the generated event. At the end, the corrected profile is stored in data processing system 10 (refer to drawing 1), as shown in block 68, and a process is again ended, as shown by block 70.

[0023] Finally, the logic flow chart which shows a setup of an adjustable complexity user interface according to the method and equipment of this invention is shown by drawing 6. As mentioned above, after a process is started with block 80, it shifts to block 82 and determining whether the function in multiplex functional application was chosen by the user is shown by block 82. When not chosen, a process is only repeated until the time of a specific function being chosen by the user comes. After a function is chosen, a process shifts to block 84.

[0024] It is determined by the user in block 84 whether the override (override) was chosen. It is shown whether by the "override", the user chose clearly the specific complexity level to a desired user interface. According to the method and equipment of this invention, by giving override capacity, a user can specify temporarily different complexity level from the level specified in the user profile to a user interface. Another user interface which has different complexity level, without changing clearly the complexity level of a request of as opposed to [ by utilizing the override technique ] the function in the user profile in a user can be looked through temporarily.

[0025] When an override function is chosen so that it may be determined by block 84, a process shifts to block 90 and accessing a desired user interface on selection level is shown by block 90. Then, the selected interface is utilized, and the user is connected to the function in multiplex functional application as shown in block 94. And a process is ended as shown by block 96. Naturally it will be understood by this contractor that it can choose at the arbitrary times in a process, without an override function deviating from the soul and the meaning of this invention. When an override function is not again chosen with reference to block 84, a process shifts to block 86 after that. This user and reference of the user profile to an optional feature are shown by block 86.

[0026] As shown by block 86, after searching a user profile to an optional feature, a process shifts to block 88 and it is determined in block 88 whether the auxiliary level of this function is listed in the user profile. That is, it is the complexity level this user expects an interface with the function. When auxiliary level is listed so that it may be determined by block 88, a process shifts to block 90 and referring to block 90 on the auxiliary level which had the desired user interface chosen is shown.

[0027] When not listed according to the important feature of this invention in the user profile searched so that auxiliary level might be determined in block 88, a process shifts to block 92 and selection of default interface level is performed in block 92. What use of a default interface should be made possible for when a multiplex user interface does not specify specific auxiliary level [ as opposed to the function in a user profile ] in the state which can be used by the user about an optional feature will be understood by this contractor. Generally, default interface level is the most fundamental level of the interface which can be used about the function. That is, in the example shown by this invention, in case this function is utilized, it is the interface level which has the option of the minimum number shown to a user. In order to process the function in which expert level was chosen as the middle row of an interface according to the method and equipment of this invention, naturally a user will be shown many options. Thus, the expert level of the interface which the user chose will show a user the option of a maximum number to the activity about the selected function about a specific function. Furthermore, the expert level of an interface only presents an option without additional text information, in order to take into consideration the space to the additional list entry in an advanced compound interface.

[0028] After choosing the default level of an interface according to a predetermined default setup, a process shifts to block 94 from block 92, and the interface of a user and a function is shown by the selected auxiliary level with block 94. That is, it is in any of default interface level or the interface level determined according to a user profile. Then, as shown in block 96, a process is ended again.

[0029] It will be understood by this contractor that the applicant in this case answered the level which the complexity level of the user interface between a user and application depends for any of the determination by the

optional feature and the user or the automatic correction by the system being, and generated the adjustable complexity user interface system which can be changed with reference to having described above. Thus, while some file organization or individuals who were operated and chosen need the fundamental auxiliary level of an interface about the function which a user utilizes compound software applications, such as an integrated accounting package, and is not utilized rarely, expert level can also be specified about a data input or data manipulation.

[0030]

[Effect of the Invention] Since this invention is constituted as mentioned above, automatic selection of the adjustable complexity user interface to the function in which it was chosen in multiplex functional application can be performed.

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## CLAIMS

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[Claim(s)]

[Claim 1] The method for the user interface for using it with the multiplex functional application in data processing system characterized by providing the following. It is the multiplex user interface setting process of being the process which sets up a multiplex user interface about each of two or more set ability in the aforementioned multiplex functional application, and having the complexity level from which the aforementioned multiplex user interface differs, respectively. It is the process in the aforementioned data processing system which creates a user profile to a one user at least. with the user profile creation process of two or more aforementioned functions in the aforementioned multiplex functional application being alike, respectively, and the aforementioned user profile receiving, and specifying desired complexity level to a one user at least the above -- the process which utilizes the aforementioned user profile in order to answer selection of the aforementioned specific function by the one user even if few and to choose automatically [ the specification of the aforementioned multiplex user interface ] one piece to the specific function in the aforementioned multiplex functional application

[Claim 2] The method for the user interface according to claim 1 which includes further the process which enables a user to change the aforementioned user profile alternatively.

[Claim 3] The method for the user interface according to claim 1 which includes further the process which answers generating of the selected event and changes the aforementioned user profile automatically.

[Claim 4] the above -- the method for the user interface according to claim 1 which includes further the process which chooses a default user interface from the aforementioned multiplex user interface automatically according to failure of the aforementioned user profile in order to specify the complexity level of a specific function according to selection of the aforementioned specific function by the one user even if few

[Claim 5] The method for the user interface according to claim 1 which includes further the process which stores the aforementioned user profile in the aforementioned data processing system.

[Claim 6] The aforementioned multiplex user interface is a method for the user interface containing at least one fundamental user interface equipped with the option of the minimum number matched with it according to claim 1.

[Claim 7] The aforementioned multiplex user interface is a method for the user interface containing at least one advanced user interface which has the option of the maximum number matched with it according to claim 1.

[Claim 8] the above -- the method for the user interface according to claim 1 which answers a demand from a one user even if few, and includes further the process of pinpointing of the aforementioned multiplex user interfaces which chooses one temporarily

[Claim 9] Data processing system which has the user interface used with the multiplex functional application characterized by providing the following. Memory means. The multiplex user interface which has the complexity level from which it is stored in the aforementioned memory means against each of two or more set ability in the aforementioned multiplex functional application, and each differs. the user profile in the aforementioned data processing system stored in the aforementioned memory means about the one user at least -- it is -- each of two or more aforementioned functions in the aforementioned multiplex functional application -- the above -- the user profile which specifies desired complexity level to a one user even if few the above -- the control means for accessing and utilizing for the aforementioned user profile, in order to answer selection of the aforementioned specific function by the one user even if few and to choose automatically [ pinpointing of the aforementioned multiplex user interfaces to the specific function in the aforementioned multiplex functional application / one ]

[Claim 10] Data processing system according to claim 9 which includes further an operator input means by which a user enables it to change the aforementioned user profile alternatively.

[Claim 11] The aforementioned control means are data processing system including a means to change the

aforementioned user profile automatically according to generating of the selected event according to claim 9.

[Claim 12] the aforementioned control means -- the above -- the data processing system according to claim 9 which includes the means for choosing a default user interface from the aforementioned multiplex user interface according to failure of the aforementioned user profile in order to specify the complexity level of a specific function according to selection of the aforementioned specific function by the one user even if few

[Claim 13] The aforementioned multiplex user interface is the data processing system containing at least one fundamental user interface which has the option of the minimum number matched with it according to claim 9.

[Claim 14] The aforementioned multiplex user interface is the data processing system containing at least one advanced user interface which has the option of the minimum number matched with it according to claim 9.